Claims

[c1] 1. A controlling device of a compressor, comprising:a commercial power source;a motor, for driving a compressor mechanism;an inverter circuit, for converting a commercial frequency to a driving frequency, to control the motor; anda noise filter, arranged at an input of the inverter circuit, for suppressing a common mode noise of the commercial power source and the inverter circuit, and connected to a ground through a metal frame used for receiving a compressor main body, and wherein the noise filter further comprises first capacitors, connected between AC power lines; second capacitors, connected among the AC power lines in series; and common mode reactor coils, connected among the first capacitors and the second capacitors; anda leakage current suppressing circuit, having a clamper for clamping a voltage, and connected between nodes of the second capacitors and the metal frame.

[c2] 2. The controlling device of claim 1, wherein the clamper in the leakage current suppressing circuit is formed by opposite connected Zener diodes.

[c3] 3. The controlling device of claim 2, wherein a Zener voltage of the Zener diode is set within a range from 10V to 30V.

[c4] 4. A controlling device of a compressor, comprising:a commercial power source;a motor, for driving a compressor mechanism;an inverter circuit, for converting a commercial frequency to a driving frequemcy, to control the motor; anda noise filter, arranged at an input of the inverter circuit, for suppressing a common mode noise of the commercial power source and the inverter circuit, and connected to a ground through a metal frame used for receiving a compressor main body, and wherein the noise filter further comprises first capacitors, connected between AC power lines; second capacitors, connected among the AC power lines in series; and common mode reactor coils, connected among the first capacitors and the second capacitors; anda leakage current suppressing circuit, having a clamper for clamping a voltage, connected between nodes of the second capacitors and the metal frame; and a third capacitor, connected to the clamper in parallel.

[c5] 5. The controlling device of claim 4, wherein the clamper in the leakage current

suppressing circuit is formed by opposite connected Zener diodes.

[c6] 6. The controlling device of claim 5, wherein a Zener voltage of the Zener diode is set within a range from 10V to 30V.

[c7] 7. The controlling device of claim 4, wherein the capacitance of the third capacitor is set within a range from 470pF to 10000pF.